Instruction Book

GX2, GX3, GX4, GX5

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	Any responsibility for damage or injury resulting from neglecting these precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair, even if not expressly stated, will be disclaimed by Atlas Copco.

General precautions

1. The operator must employ safe working practices and observe all related local work safety requirements and regulations.
2. If any of the following statements does not comply with local legislation, the stricter of the two shall apply.
3. Installation, operation, maintenance and repair work must only be performed by authorised, trained, specialised personnel.
4. The compressor is not considered capable of producing air of breathing quality. For air of breathing quality, the compressed air must be adequately purified according to local legislation and standards.
5. Before any maintenance, repair work, adjustment or any other non-routine checks, stop the compressor, press the emergency stop button, switch off the voltage and depressurise the compressor. In addition, the power isolating switch must be opened and locked.
6. Never play with compressed air. Do not apply the air to your skin or direct an air stream at people. Never use the air to clean dirt from your clothes. When using the air to clean equipment, do so with extreme caution and wear eye protection.

Precautions during installation

1. The machine must only be lifted using suitable equipment in accordance with local safety regulations. Loose or pivoting parts must be securely fastened before lifting. It is strictly forbidden to dwell or stay in the risk zone under a lifted load. Lifting acceleration and deceleration must be kept within safe limits. Wear a safety helmet when working in the area of overhead or lifting equipment.
2. Place the machine where the ambient air is as cool and clean as possible. If necessary, install a suction duct. Never obstruct the air inlet. Care must be taken to minimise the entry of moisture at the inlet air.
3. Any blanking flanges, plugs, caps and desiccant bags must be removed before connecting the pipes.
4. Air hoses must be of correct size and suitable for the working pressure. Never use frayed, damaged or worn hoses. Distribution pipes and connections must be of the correct size and suitable for the working pressure.
5. The aspirated air must be free of flammable fumes, vapours and particles, e.g. paint solvents, that can lead to internal fire or explosion.
6. Arrange the air intake so that loose clothing worn by people cannot be sucked in.
7. Ensure that the discharge pipe from the compressor to the aftercooler or air net is free to expand under heat and that it is not in contact with or close to flammable materials.
8. No external force may be exerted on the air outlet valve; the connected pipe must be free of strain.
9. If remote control is installed, the machine must bear a clear sign stating: DANGER: This machine is remotely controlled and may start without warning.
10. The machines must be installed in such a way that an adequate flow of cooling air is available and that the exhausted air does not recirculate to the compressor air inlet or cooling air inlet.
11. The electrical connections must correspond to the local codes. The machines must be earthed and protected against short circuits by fuses in all phases. A lockable power isolating switch must be installed near the compressor.
12. On machines with automatic start-stop system or if the automatic restart function after voltage failure is activated, a sign stating "This machine may start without warning" must be affixed near the instrument panel.
13. In multiple compressor systems, manual valves must be installed to isolate each compressor. Non-return valves (check valves) must not be relied upon for isolating pressure systems.
14. Never remove or tamper with the safety devices, guards or insulation fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure must be protected by a pressure-relieving device or devices as required.
15. Pipework or other parts with a temperature in excess of 80°C (176°F) and which may be accidentally touched by personnel in normal operation must be guarded or insulated. Other high-temperature pipework must be clearly marked.
16. If the ground is not level or can be subject to variable inclination, consult the Atlas Copco Customer Centre.

	Also consult the following safety precautions: Safety precautions during operation and Safety precautions during maintenance. Some precautions are general and may not apply to your machine.

1.3 Safety precautions during operation

	All responsibility for any damage or injury resulting from neglecting these precautions, or by non-observance of ordinary caution and due care required in installation, operating, maintenance or repair, even if not expressly mentioned, will be disclaimed by Atlas Copco.

General precautions

1. The operator must employ safe working practices and observe all related local work safety requirements and ordinances.
2. If any of the following statements does not comply with local legislation, the stricter of the two shall apply.
3. Installation, operation, maintenance and repair shall only be performed by authorized, trained, competent personnel.
4. The compressor is not considered as capable of producing air of breathing quality. For breathing air quality, the compressed air must be adequately purified according to local legislation and standards.
5. Before any maintenance or repair, adjustment, or any check other than routine attention, stop the compressor, press the emergency stop button, switch off the voltage and depressurize the compressor. In addition, the power isolating switch shall be opened and locked.
6. Never play with compressed air. Do not apply it to your skin or direct an air stream at people. Never use it to clean dirt from your clothes. When using it to clean equipment, do so with extreme caution and use eye protection.

Precautions during operation

1. Use only the correct type and size of hose end fittings and connections. When blowing through a hose or air line, ensure that the open end is held securely. A free end will whip and may cause injury. Make sure that a hose is fully depressurized before disconnecting it.
2. Persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the remote start equipment.
3. Never operate the machine when there is a possibility of taking in flammable or toxic fumes, vapours or particles.
4. Never operate the machine below or in excess of its limit ratings.
5. Keep all bodywork doors shut during operation. The doors may be opened for short periods only, e.g. to carry out routine checks. Wear ear protectors when opening a door.
6. People staying in environments or rooms where the sound pressure level reaches or exceeds 90 dB(A) shall wear ear protectors.
7. Periodically check that:
   - All guards are in place and securely fastened
   - All hoses and/or pipes inside the machine are in good condition, secure and not rubbing
   - There are no leaks
   - All fasteners are tight

- All electrical leads are secure and in good order
- Safety valves and other pressure-relief devices are not obstructed by dirt or paint
- Air outlet valve and air net, i.e. pipes, couplings, manifolds, valves, hoses, etc. are in good repair, free of wear or abuse

8. If warm cooling air from compressors is used in air heating systems, e.g. to warm up a workroom, take precautions against air pollution and possible contamination of the breathing air.
9. Do not remove any of, or tamper with, the sound-damping material.
10. Never remove or tamper with the safety devices, guards or insulations fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure shall be protected by a pressure-relieving device or devices as required.

	Also consult following safety precautions: Safety precautions during installation and Safety precautions during maintenance. Some precautions are general and may not apply to your machine.

1.4 Safety precautions during maintenance or repair

	All responsibility for any damage or injury resulting from neglecting these precautions, or by non-observance of ordinary caution and due care required in installation, operating, maintenance or repair, even if not expressly mentioned, will be disclaimed by Atlas Copco.

General precautions

1. The operator must employ safe working practices and observe all related local work safety requirements and ordinances.
2. If any of the following statements does not comply with local legislation, the stricter of the two shall apply.
3. Installation, operation, maintenance and repair shall only be performed by authorized, trained, competent personnel.
4. The compressor is not considered as capable of producing air of breathing quality. For breathing air quality, the compressed air must be adequately purified according to local legislation and standards.
5. Before any maintenance or repair, adjustment, or any check other than routine attention, stop the compressor, press the emergency stop button, switch off the voltage and depressurize the compressor. In addition, the power isolating switch shall be opened and locked.
6. Never play with compressed air. Do not apply it to your skin or direct an air stream at people. Never use it to clean dirt from your clothes. When using it to clean equipment, do so with extreme caution and use eye protection.

Precautions during maintenance or repair

1. Always wear safety glasses.

2. Use only the correct tools for maintenance and repair work.
3. Use only genuine spare parts.
4. All maintenance work shall only be undertaken when the machine has cooled down.
5. A warning sign bearing a legend such as "work in progress; do not start" shall be attached to the starting equipment.
6. Persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the remote start equipment.
7. Before removing any pressurized component, effectively isolate the machine from all sources of pressure and relieve the entire system of pressure.
8. Never use flammable solvents or carbon tetrachloride for cleaning parts. Take safety precautions against toxic vapours of cleaning liquids.
9. Scrupulously observe cleanliness during maintenance and repair. Keep dirt away by covering the parts and exposed openings with a clean cloth, paper or tape.
10. Never weld or perform any operation involving heat near the oil system. Oil tanks must be completely purged, e.g. by steam-cleaning, before carrying out such operations. Never weld on, or in any way modify, pressure vessels.
11. Whenever there is an indication or any suspicion that an internal part of a machine is overheated, the machine shall be stopped but no inspection covers shall be opened before sufficient cooling time has elapsed; this to avoid the risk of spontaneous ignition of the oil vapour when air is admitted.
12. Never use a light source with open flame for inspecting the interior of a machine, pressure vessel, etc.
13. Make sure that no tools, loose parts or rags are left in or on the machine.
14. Before clearing the machine for use after maintenance or overhaul, check that operating pressures, temperatures and time settings are correct. Check that all control and shut-down devices are fitted and that they function correctly. If removed, check that the coupling guard of the compressor drive shaft has been reinstalled.
15. Every time the separator element is renewed, examine the discharge pipe and the inside of the oil separator vessel for carbon deposits; if excessive, the deposits should be removed.
16. Protect the motor, air filter, electrical and regulating components, etc. to prevent moisture from entering them, e.g. when steam-cleaning.
17. Make sure that all sound-damping material, e.g. on the bodywork and in the air inlet and outlet systems of the compressor, is in good condition. If damaged, replace it by genuine Atlas Copco material to prevent the sound pressure level from increasing.
18. Never use caustic solvents which can damage materials of the air net, e.g. polycarbonate bowls.
19. The following safety precautions are stressed when handling refrigerant:
    - Never inhale refrigerant vapours. Check that the working area is adequately ventilated; if required, use breathing protection.
    - Always wear special gloves. In case of refrigerant contact with the skin, rinse the skin with water. If liquid refrigerant contacts the skin through clothing, never tear off or remove the latter; flush abundantly with fresh water over the clothing until all refrigerant is flushed away; then seek medical first aid.
20. Protect hands to avoid injury from hot machine parts, e.g. during draining of oil.

	Also consult following safety precautions: Safety precautions during installation and Safety precautions during operation. Some precautions are general and may not apply to your machine.

2 General description

2.1 Introduction

Introduction

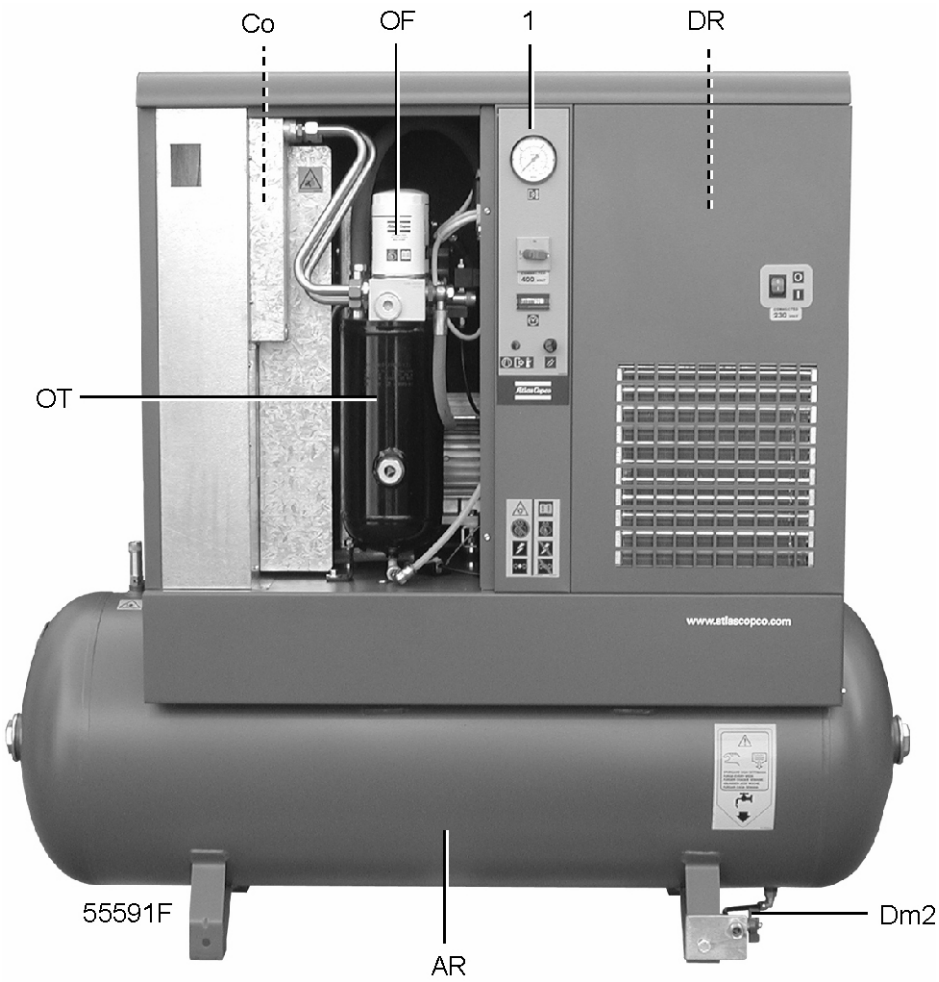
GX2 up to GX5 are single-stage, oil-injected screw compressors.

The compressor is air-cooled and belt-driven by an electric motor. The compressor is enclosed in sound-insulated bodywork. An easy-to-operate control panel (1) is provided, including the start/stop switch and the emergency stop button. A cabinet housing the regulator, pressure switch and motor starter is integrated into the bodywork.

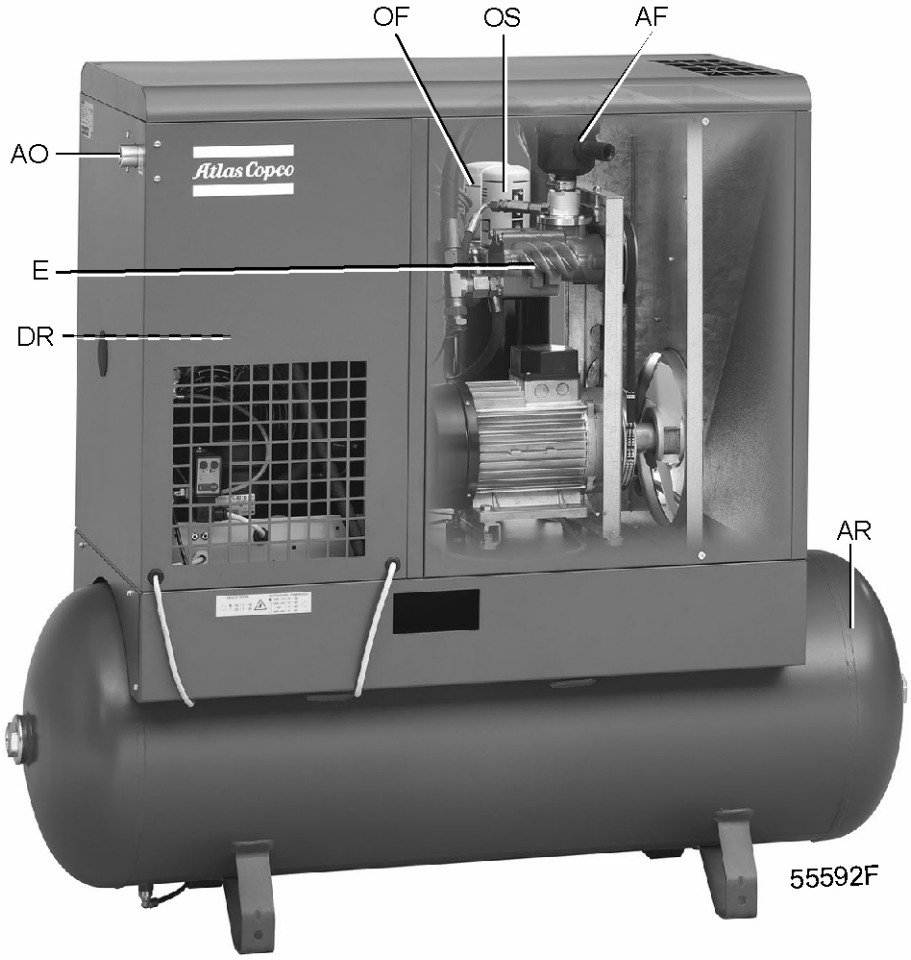
Tank-mounted model

Front view, GX2 up to GX5

Ref.	Name
1	Control panel
AO	Air outlet
AR	Air receiver
Dm2	Automatic condensate drain, air receiver
SV	Safety valve



Front view, GX2 up to GX5 Full-Feature



Rear view, GX2 up to GX5 Full-Feature

GX2 up to GX5 are mounted on a large air receiver (AR) of 200 l (52.80 US gal / 44 Imp gal / 7 cu.ft).

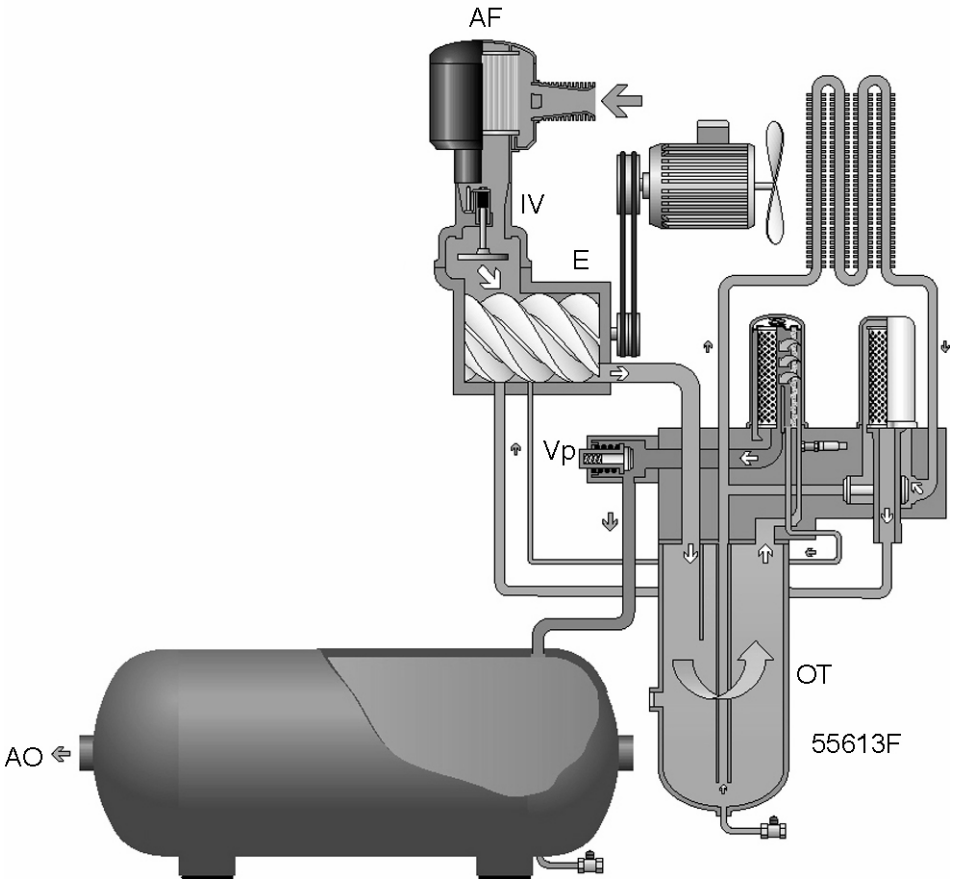
Ref.	**Name**
1	Control panel
AF	Air filter
AO	Air outlet
AR	Air receiver
Co	Oil cooler
Dm2	Manual condensate drain, air receiver
DR	Dryer
E	Compressor element
OF	Oil filter
OS	Oil separator
OT	Oil separator tank

GX Pack

The compressor is not fitted with a dryer.

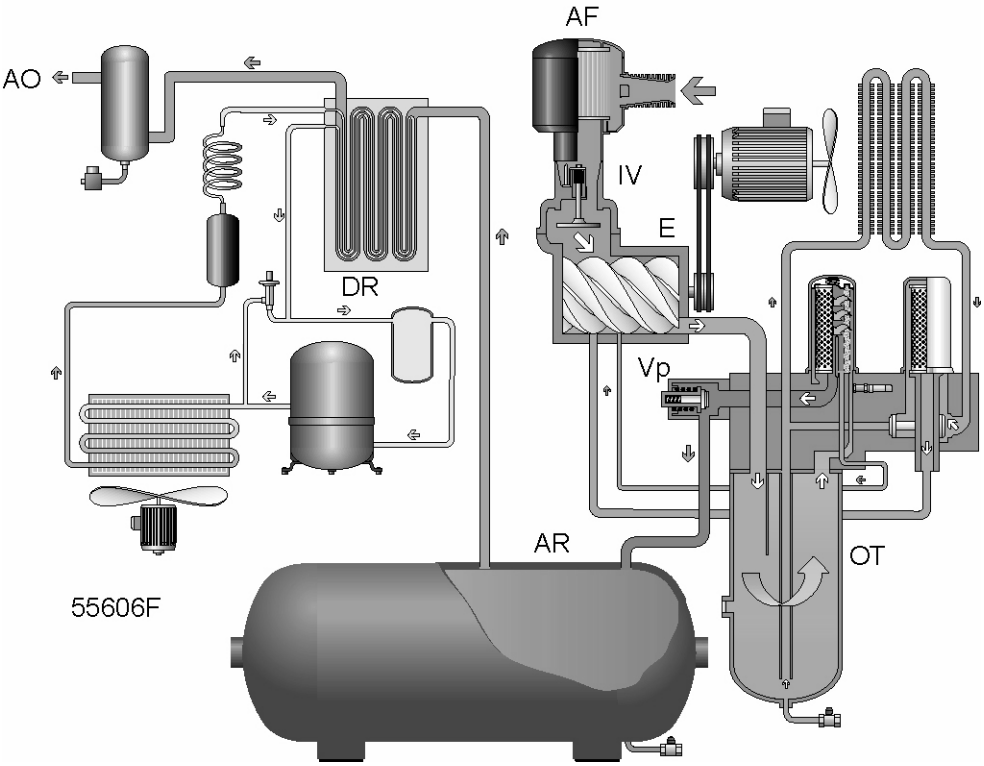
2.2 Air flow

Flow diagram



Air flow, GX2 up to GX5 Pack

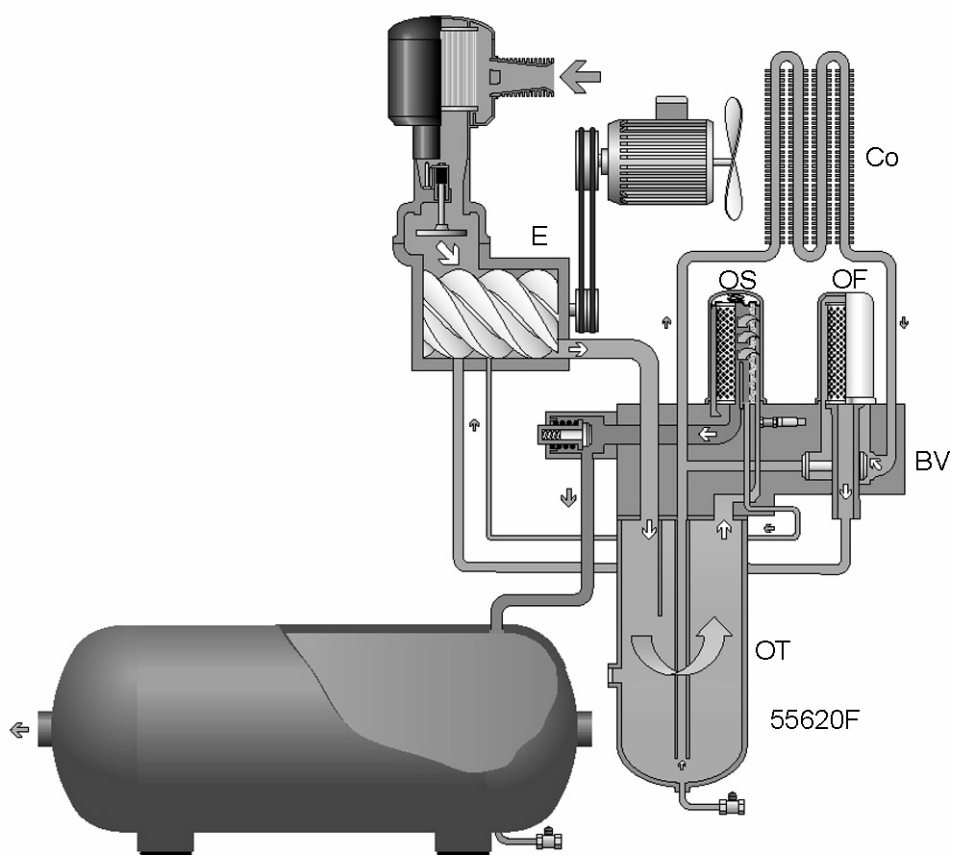
Air drawn through filter (AF) and open inlet valve (IV) into compressor element (E) is compressed. Compressed air and oil flow into oil separator/tank (OT) where most of the oil is removed. The air is discharged via minimum pressure valve (Vp) towards the air outlet (AO).



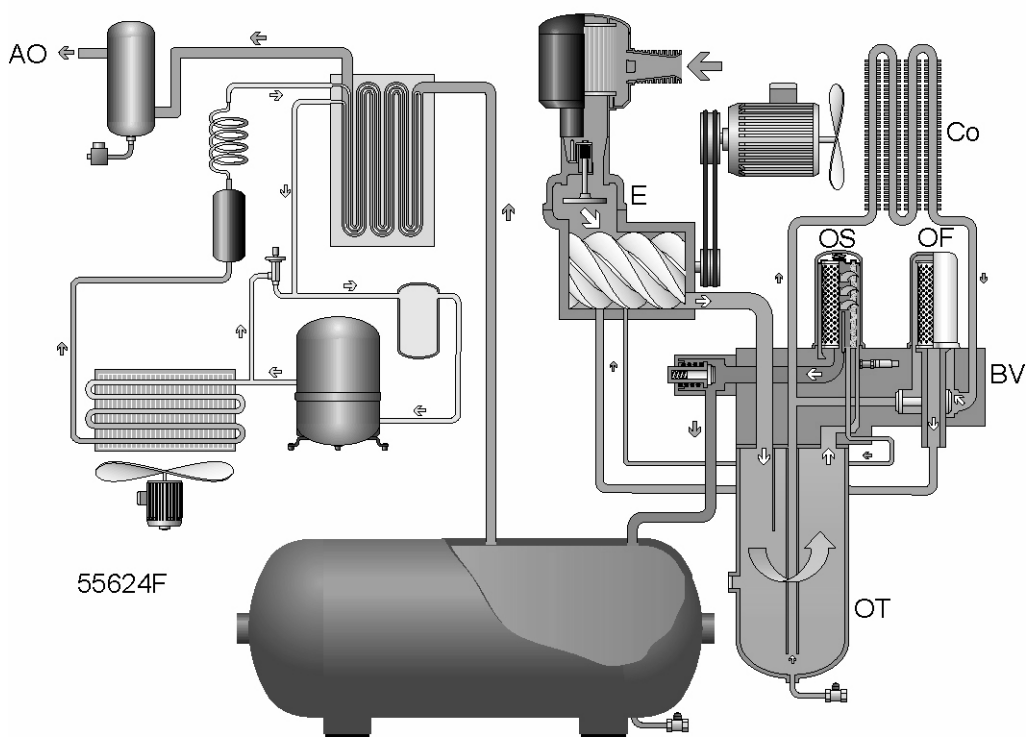
Air flow, GX2 up to GX5 Full-Feature

Air drawn through filter (AF) and open inlet valve (IV) into compressor element (E) is compressed. Compressed air and oil flow into oil separator/tank (OT) where most of the oil is removed. The air is discharged via minimum pressure valve (Vp), air receiver (AR) and dryer (DR) towards the air outlet (AO).

2.3 Oil system



GX2 up to GX5 Pack



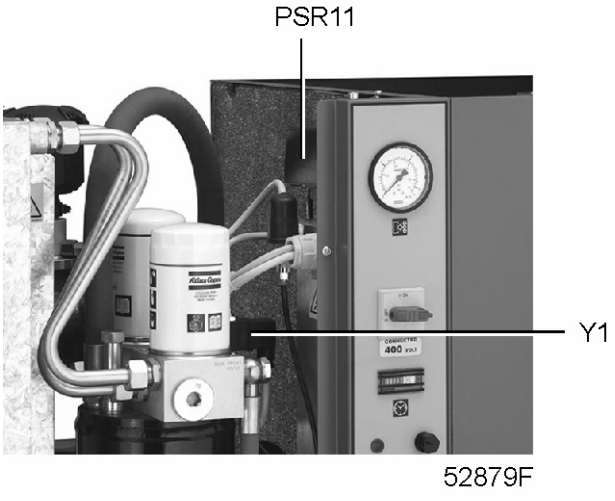
GX2 up to GX5 Full-Feature

Air pressure forces the oil from oil separator/tank (OT) through oil cooler (Co) and filter (OF) to compressor element (E) and the lubrication points. In oil separator/tank (OT), most of the oil is removed centrifugally; the rest is removed by separator (OS).

The oil system has a thermostatic by-pass valve (BV). The oil cooler is by-passed until the oil reaches the correct operating temperature.

2.4 Regulating system

Main components



View on regulating system

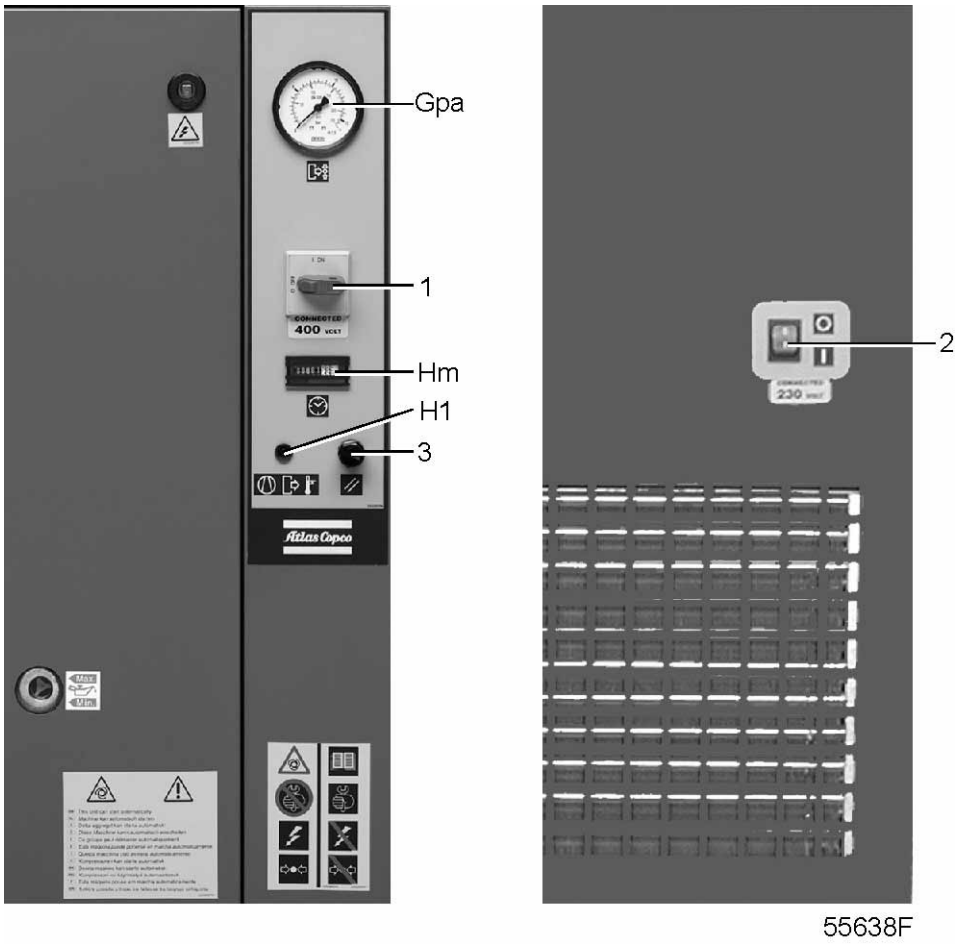
The main components of the regulating system are:

- Pressure switch (PSR11) which opens and closes at preset pressure limits.
- Blow-off valve (Y1)

Pressure switch (PSR11) opens and closes its contacts at pre-set pressures. During loaded operation, the contacts are closed: the motor is running.

If the working pressure reaches the maximum limit, the contacts of the pressure switch open: the motor will stop. The blow-off valve (Y1) opens and the pressure in the air/oil separator is released. When the working pressure decreases to the pre-set minimum pressure, the contacts of the pressure switch close and the motor restarts. The blow-off valve closes and compressed air is supplied to the receiver again.

2.5 Control panel

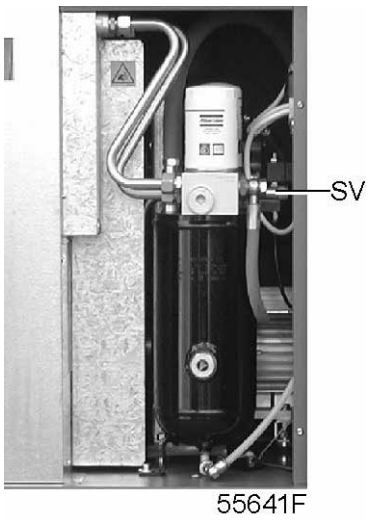


Control panel, GX2 up to GX5

Reference	Designation	Function
1	Start/stop switch - emergency switch	Starts and stops the compressor. Also used to stop the compressor in the event of an emergency and to reset the thermal overload of the electric motor by switching it to 0 and back to I.
2	Dryer on/off button	Button to switch on/off the dryer Not installed on Pack versions
3	Reset button	Reset button (after unscrewing cover) for high oil temperature shut-down.
Hm	Hour meter	Indicates the total running time.
Gpa	Working pressure	The white pointer indicates the actual working pressure.
H1	Alarm lamp	Lights up in the event of high oil temperature shut-down.

2.6 Protection of compressor

Safety valve of the vessel

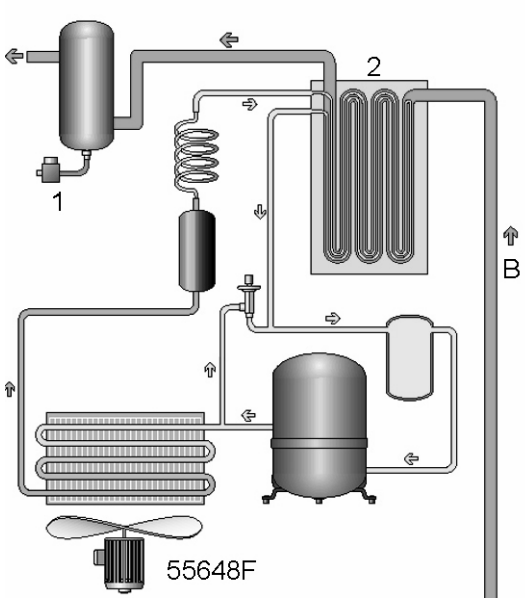


Safety valve on the compressor

Reference	Designation	Function
Q21 Also see the Electrical diagrams section	Motor overload relay	To shut down the compressor in case the motor current is too high.
TSHH11 Also see the Electrical diagrams section	Temperature shut-down switch	To shut down the compressor if the temperature at the outlet of the compressor element is too high.
SV	Safety valve	To protect the air outlet system if the outlet pressure exceeds the opening pressure of the valve.

After tripping of the temperature protection: switch off the voltage and depressurise. See Maintenance remarks. Check and remedy. See Problem solving. Wait a few minutes to let the machine cool down. To reset and restart, switch on the voltage and press the red reset button after unscrewing its cover: the machine will restart.

2.7 Air dryer



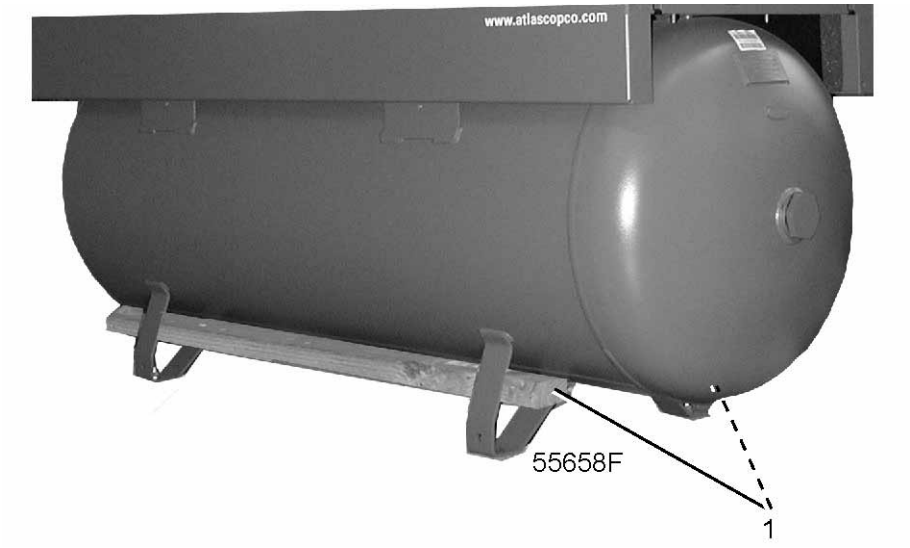
Air dryer

Wet compressed air (B) enters the dryer. The air then flows through a heat exchanger (2) where refrigerant evaporates, withdrawing heat from the air. The cold air then flows through a condensate trap (1) which separates condensate from the air. The condensate is automatically drained and this is regulated by a timer. The dried air is then discharged from the dryer.

3 Installation

3.1 Installation proposal

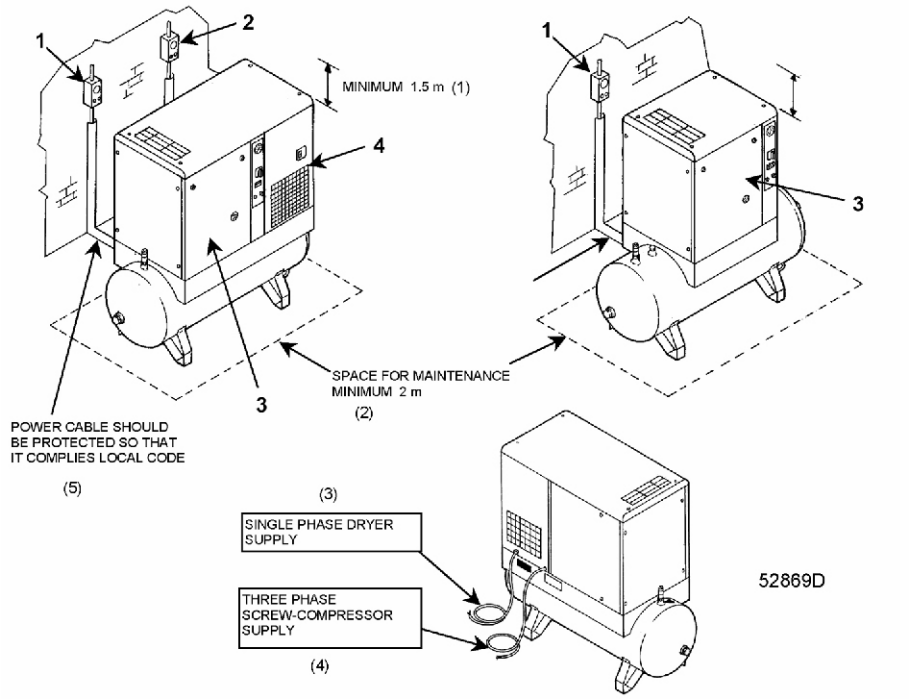
Important



Transport by a pallet truck

	To prevent a Tank-mounted model from falling over during transport by a pallet truck: push the forks underneath the air receiver and place a wooden beam (1) (cross-section approx. 4 x 6 cm / 1.6 x 2.4 in) through the supports on both sides of the receiver. While holding the compressor, slowly lift the forks until the receiver is secured between the beams.
	Move the compressor gently.

Proposal



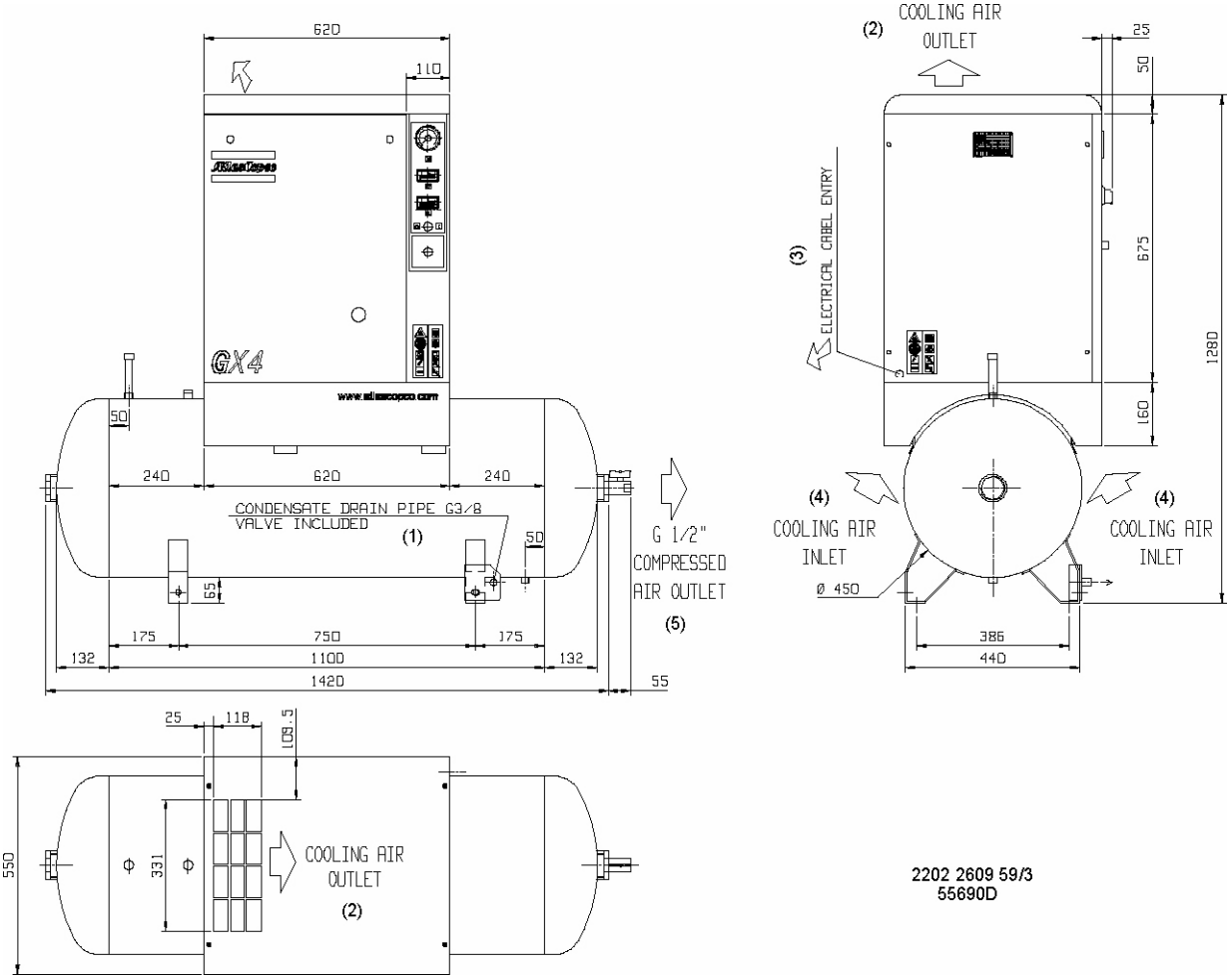
Installation proposal, GX2 up to GX5

Ref.	Description/recommendation
1	Isolating switch, compressor
2	Isolating switch, dryer
3	Front panel, compressor
4	Dryer
(1)	Minimum 1.5 m
(2)	Space for maintenance, minimum 2 m
(3)	Single-phase dryer supply
(4)	Three-phase screw compressor supply
(5)	The power cable should be protected so that it complies with local codes

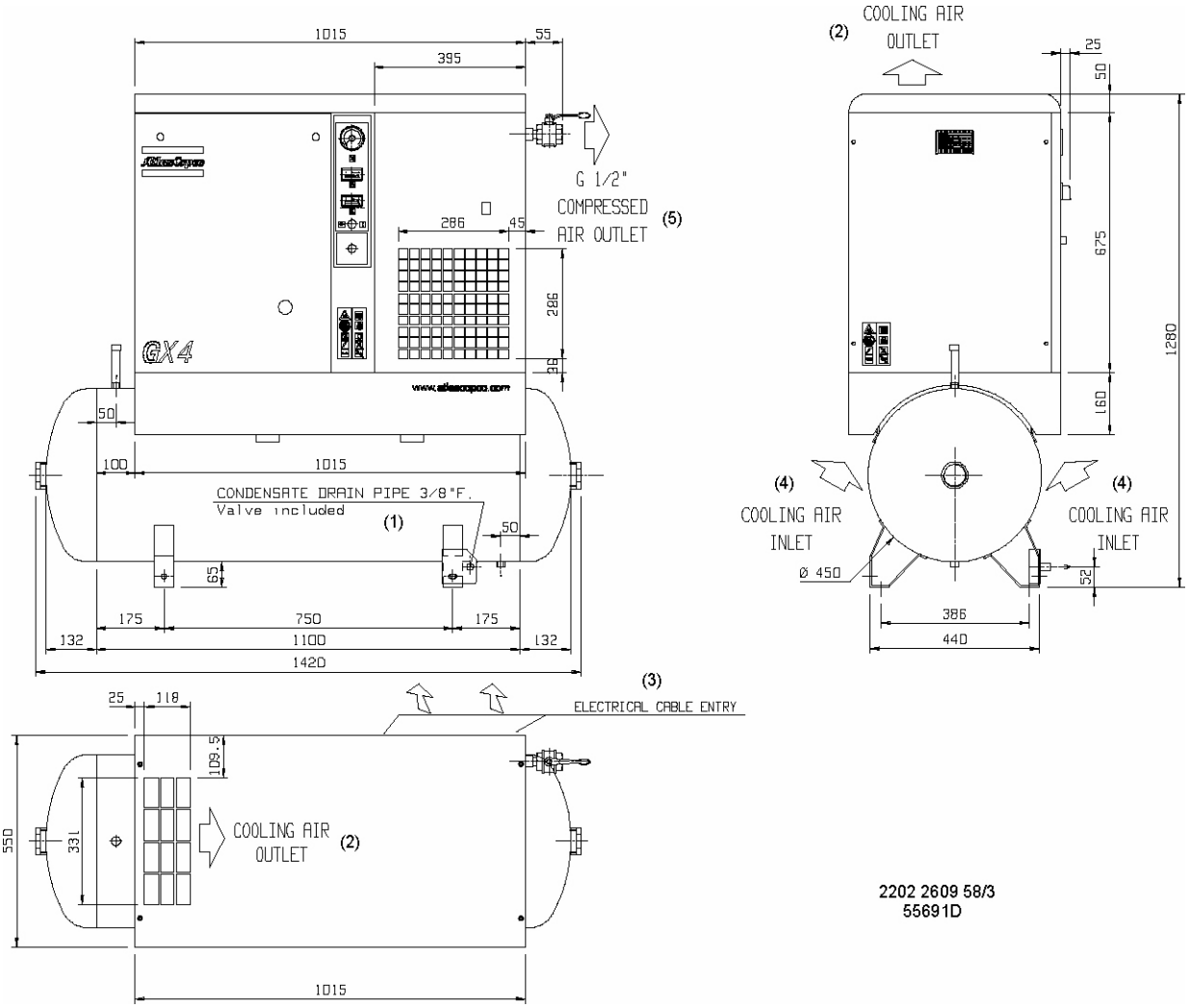
Step	Action
1	Install the compressor on a solid, level floor suitable for taking the weight. The recommended minimum distance between the top of the unit and the ceiling is 1.5 m (58.5 in). The minimum distance between the wall and the back of the compressor must be 200 mm (7.8 in).
2	Position of the compressed air outlet valve. Close the valve. Connect the air net to the valve.
3	The pressure drop over the delivery pipe can be calculated from the following formula: $dp = (L \times 450 \times Qc^{1.85}) / (d^5 \times P)$ • dp = pressure drop (recommended maximum = 0.1 bar / 1.5 psi) • L = length of delivery pipe in m • d = inner diameter of the delivery pipe in mm • P = absolute pressure at the compressor outlet in bar(a) • Qc = free air delivery of the compressor in l/s
4	Ventilation: the inlet grids and ventilation fan should be installed in such a way that any recirculation of cooling air to the compressor or dryer is avoided.
5	Lay out the condensate drain flexible from timer (T) as well as the flexible from condensate drain valve (4) towards a drain collector. The drain flexibles to the drain collector must not dip into the water of the drain collector. See the Starting section for the location of the components.

3.2 Dimension drawings

Dimension drawings, GX2 up to GX5



GX2 up to GX5, Pack



GX2 up to GX5, Full-Feature

Ref.	Name
1	Condensate drain pipe, valve included
2	Cooling air outlet
3	Electrical cable entry
4	Cooling air inlet
5	Compressed air outlet

3.3 Electric cable size

Attention

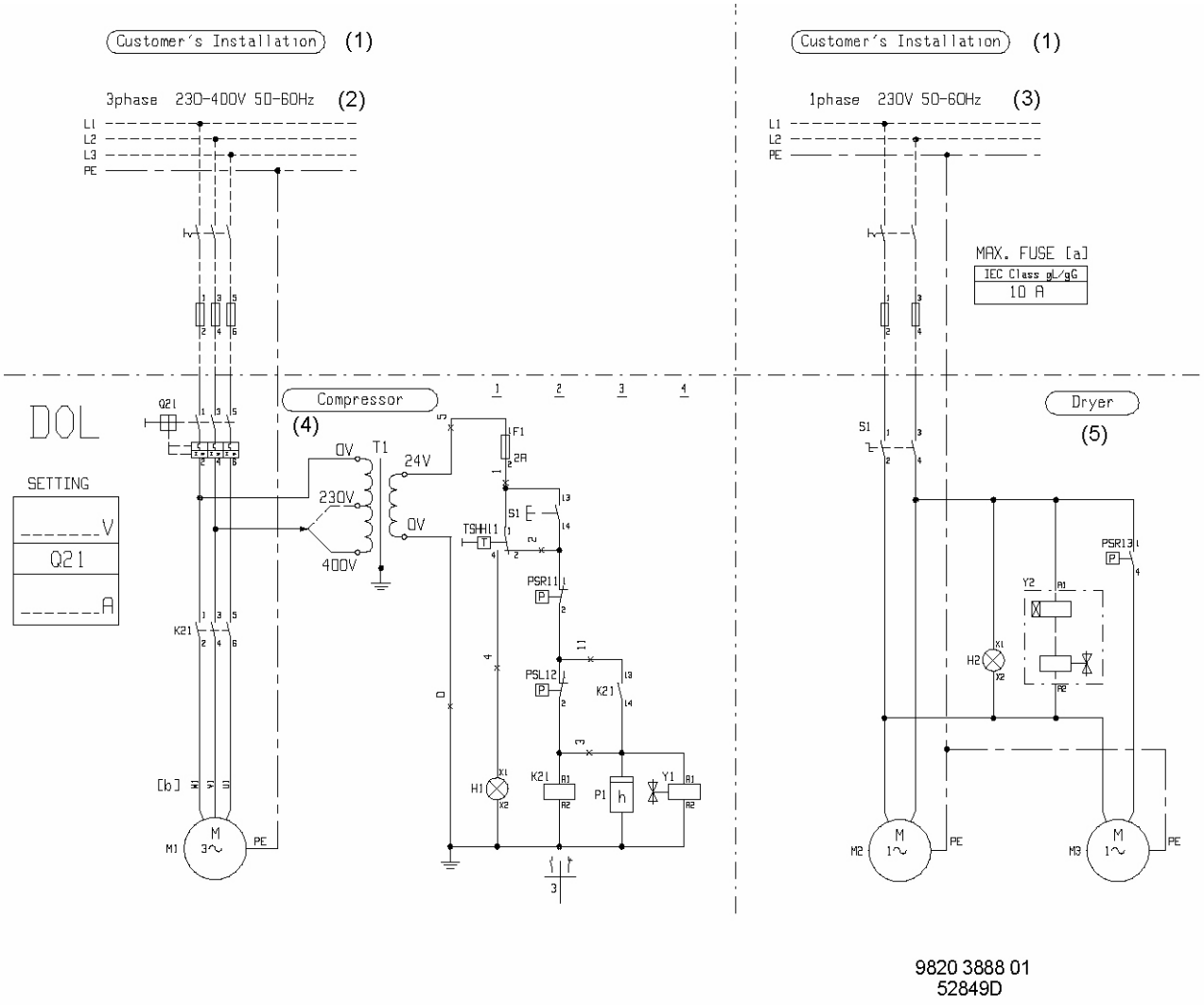
⚠	Local regulations remain applicable if they are stricter than the values proposed below. The voltage drop must not exceed 5% of the nominal voltage. It may be necessary to use cables of a larger size than those stated to comply with this requirement.

		GX2	GX3	GX4	GX5
Frequency (Hz)	**Voltage (V)**	**Cable size**	**Cable size**	**Cable size**	**Cable size**
IEC		(mm^2)	(mm^2)	(mm^2)	(mm^2)
50	230	2.5	2.5	4	4
50	400	1	1	1.5	1.5
60	230, 1-ph	2.5	4	4	6
60	380	1.5	-	1.5	1.5
CSA/UL		AWG	AWG	AWG	AWG
60	230, 1-ph	2.5	4	4	6
60	208	1.5	-	2.5	4
60	230	1.5	-	2.5	4
60	460	1.5	-	1.5	1.5
60	575	1.5	-	1.5	1.5

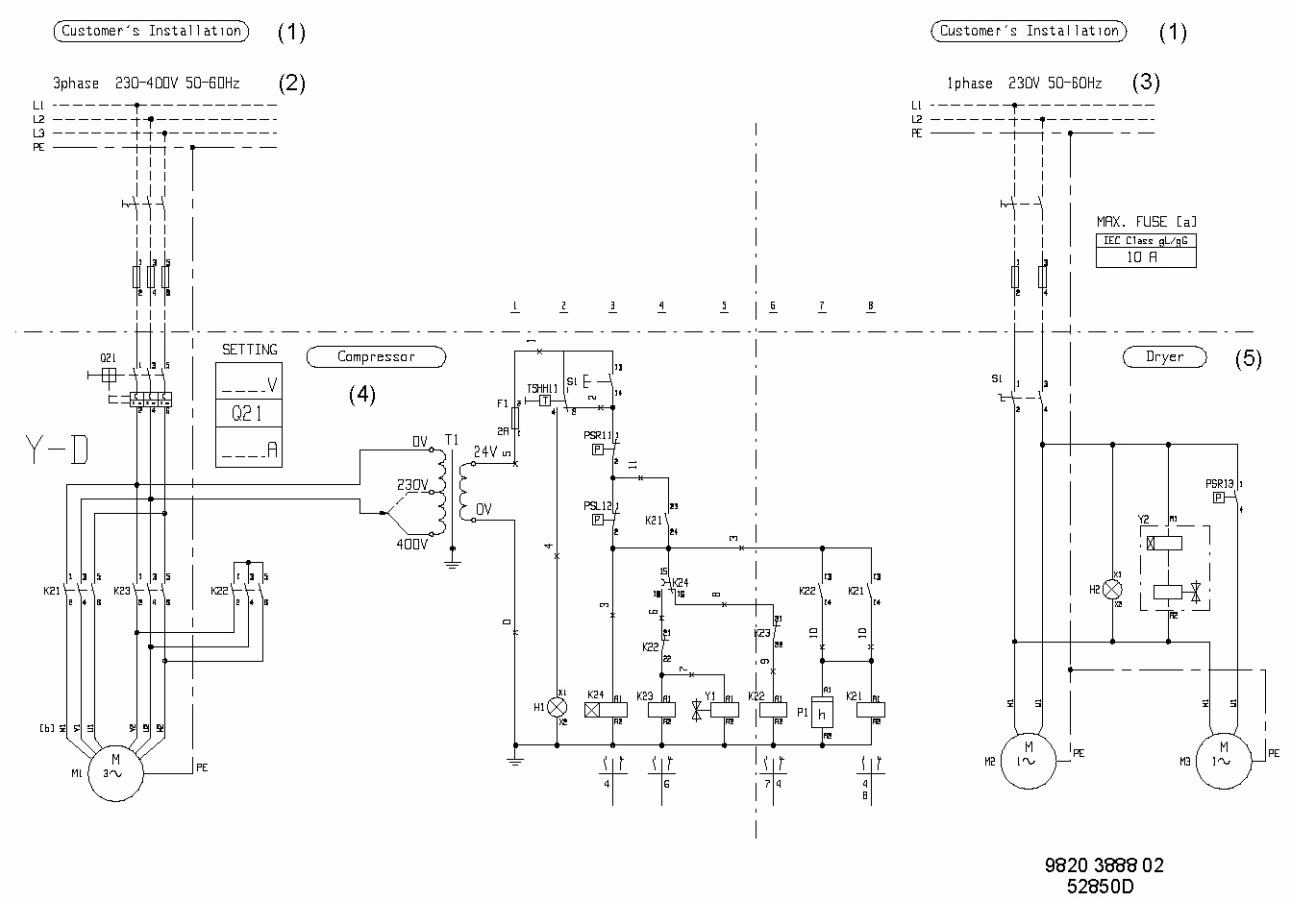
3.4 Electrical connections

Step	Action
1	Ensure that the supply voltage matches the voltage on the data plate.
2	Fit an isolating switch near the compressor. For Full-Feature compressors: fit an isolating switch near the dryer.
3	Fit fuses in the incoming wiring. Check the condition of all incoming wiring and make connections. See Electrical diagrams.

3.5 Electrical diagrams



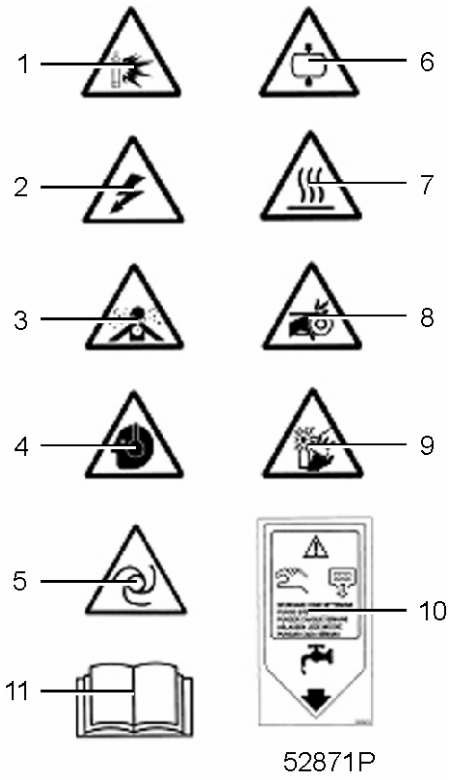
Electrical diagram, GX2 up to GX5 with DOL starter



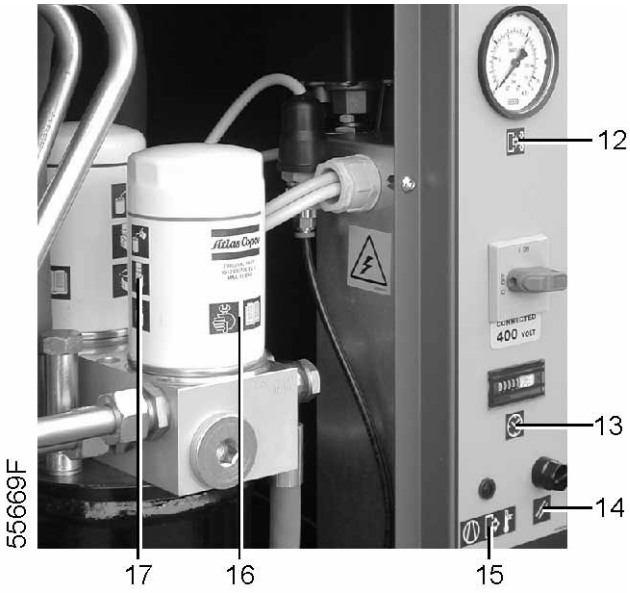
Electrical diagram, GX2 up to GX5 with Y/D starter

Ref.	Name
(1)	Customer's installation
(2)	3-phase 230-400 V 50-60 Hz
(3)	1-phase 230 V 50-60 Hz
(4)	Compressor
(5)	Dryer

3.6 Pictographs



Pictographs, GX2 up to GX5



Pictographs, GX2 up to GX5

Ref.	Description
1	Warning: possible air/fluid discharge
2	Warning: voltage
3	Warning: air must not be inhaled
4	Warning: wear ear protectors
5	Warning: machine may start automatically
6	Warning: pressure
7	Warning: hot parts
8	Warning: moving parts
9	Warning: rotating fan
10	Drain condensate weekly
11	Read the instruction manual
12	Working pressure
13	Hour meter
14	Reset of temperature protection
15	High temperature outlet of the compressor element
16	Read instruction manual before carrying out maintenance or repair work
17	Lightly oil gasket of oil filter, screw filter on and tighten by hand

4 Operating instructions

4.1 Initial start-up

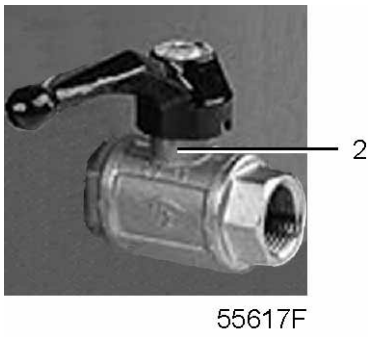
Safety

	The operator must apply all relevant Safety precautions.

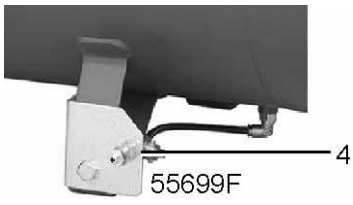
Moving

To safely move a Tank-mounted model, see Installation.

General preparation



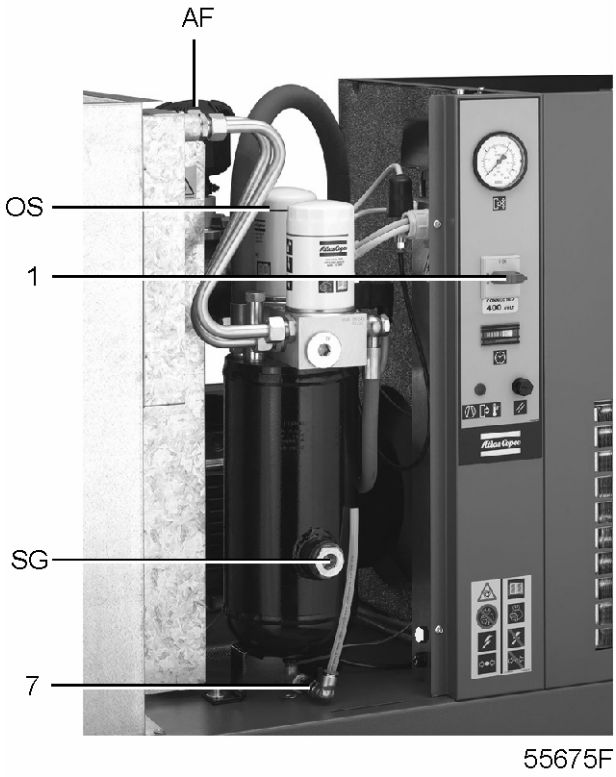
Air outlet valve



Condensate drain valve, GX2 up to GX5

Step	Action
1	Consult the installation instructions (see Installation).
2	Check that the electrical connections correspond to the local codes. The installation must be earthed and protected against short circuits by fuses in all phases. An isolating switch must be installed near the compressor.
3	Fit outlet valve (2), close it and connect the air net to the valve. Connect condensate drain valve (4) of the air receiver to a drain collector. Close the valve.

Oil system



Oil level sight-glass, GX2 up to GX5

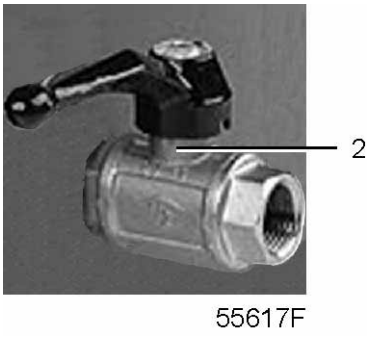
Step	Action
	If more than 3 months have passed between assembly and installation, be sure to lubricate the compressor before starting up: • Remove the front panel. • Unscrew the fixing bolts in the top and remove the panel. • Unscrew the cover of the air filter (AF) and remove the filter element. • Open valve (7) and drain approx. 0.2 l (0.05 US gal / 0.04 Imp gal) of oil into a clean receptacle. Carefully pour this oil through the filter housing into the compressor element. • Fit the air filter and screw on the filter cover. • Refit the top and front panels.
	Check the oil level. The oil level sight-glass (SG) must be above the minimum level. If the oil level is below the minimum level, top up to the middle. Do not overfill. Always use the same type of oil.

Start-up

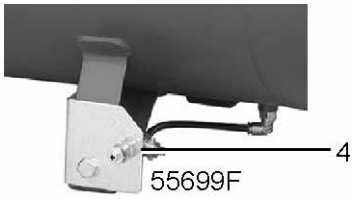
Label on the top

Step	Action
1	Check that all panels of the compressor housing are fitted. Check that sheet (5) (explaining the procedure for checking the motor rotation direction) is affixed to the cooling air outlet of the compressor (grating on the compressor top). Consult Dimension drawings. Switch on the voltage. Run the compressor for 1 second by briefly toggling switch (1) to position I and stop after 1 second by turning the switch to position O. Check the rotation direction of the motor. If the motor rotation direction is correct, the label on the top grating will be blown upwards. If the sheet remains in place, the rotation direction is incorrect. If the rotation direction is incorrect, switch off the voltage, open the isolating switch and reverse two incoming electric lines. All electrical work should be carried out by professionally qualified people.
2	Start and run the compressor for a few minutes. Check that the compressor operates normally.

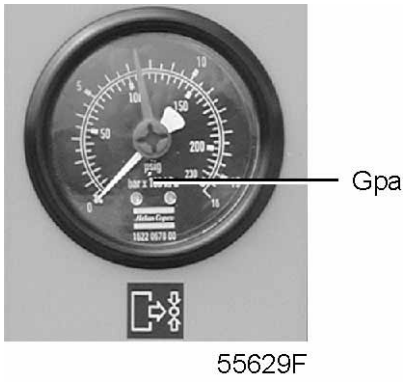
4.2 Starting



Air outlet valve



Condensate drain valve, GX2 up to GX5

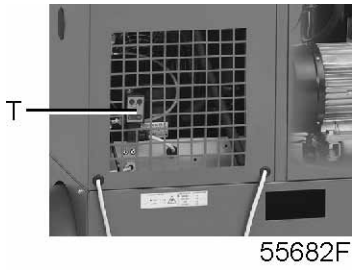


Pressure gauge

Starting the air dyer on GX2 up to GX5 Full-Feature

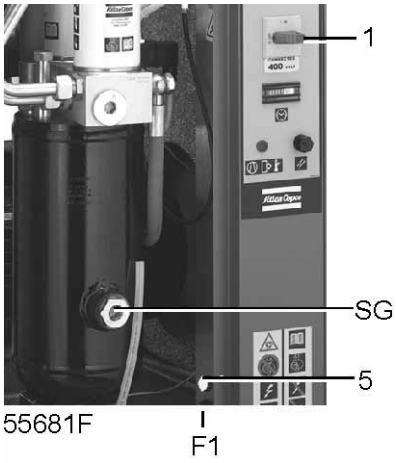
Dryer on/off switch

Step	Action
1	Switch on the voltage to the dryer and start it by moving switch (3) to I.
	• Switch on the dryer before turning on the compressor • The dryer must be kept running while the air compressor is operating to ensure that the air piping remains condensate-free. • If the dryer is switched off, wait at least 5 minutes before restarting the dryer; this allows for balancing of the internal pressure in the dryer.



Timer drain (Rear side of the dryer)

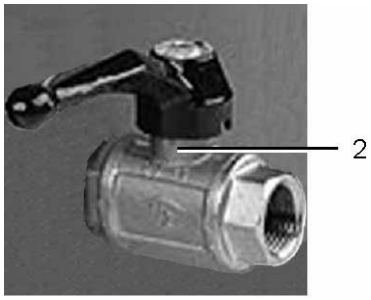
Starting the compressor



Compressor switches

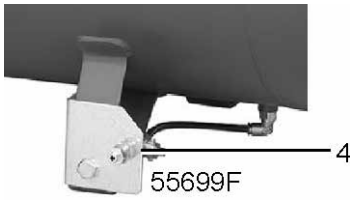
Step	Action
1	Check the oil level sight-glass (SG). The oil level should be in the middle. If it is below the minimum level, top up to the middle. Do not overfill.
2	Switch on the voltage.
3	Open air outlet valve (2).
4	Move start/stop switch (1) to position I.
	If the compressor has been exposed to low temperatures (below 0°C/32°F), it may have difficulty starting due to high oil viscosity. In this case, depress yellow button (5) while starting using button (1). Button (5) should only be depressed for a few seconds while starting. Button (5) should only be used if experiencing difficulty due to low temperatures.
5	Regularly check the working pressure (Gpa).
6	For Full-Feature compressors, regularly check that condensate is drained (T) during running.

4.3 Stopping



55617F

Air outlet valve



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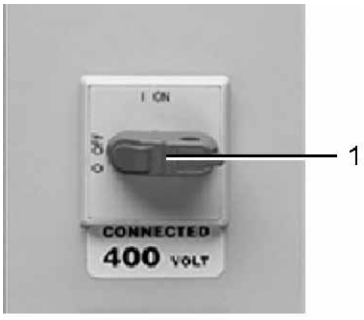
Condensate drain valve, GX2 up to GX5

52885F

Dryer on/off switch

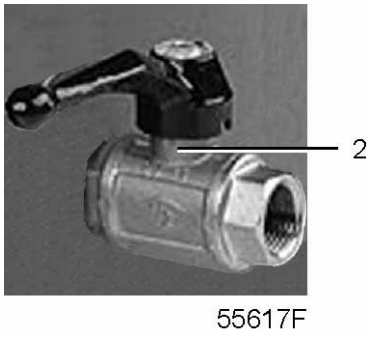


55600F

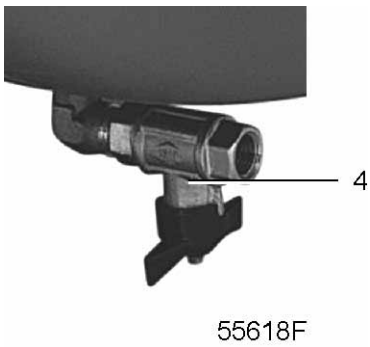
Dryer on/off switch

Step	Action
1	Move start/stop switch (1) to position 0. On Full-Feature units: move switch (3) of the dryer to position 0.
2	Close air outlet valve (2) and switch off the voltage to the compressor. On Full-Feature units: switch off the voltage to the dryer.
3	Open condensate drain valve (4) of the air receiver for a few seconds to drain any condensate and then close the valve.
⚠	The air dryer and the air receiver remain under pressure. The PDX filter (if installed) remains under pressure. If maintenance or repair work is necessary, consult the Problem solving section for all relevant safety precautions.
4	Wait at least 30 seconds before restarting the machine.

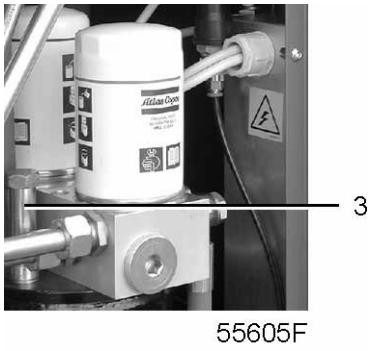
4.4 Taking out of operation



Air outlet valve



Condensate drain valve



Filler plug, GX2 up to GX5

This procedure should be carried out at the end of the compressor's service life.

Step	Action
1	Stop the compressor and close the air outlet valve (2).
2	Switch off the voltage and disconnect the compressor from the mains.
3	Depressurise the compressor by opening plug (3) one turn. Open condensate drain valve (4).
4	Shut off and depressurise the part of the air net which is connected to the outlet valve. Disconnect the compressor air outlet valve from the air net.
5	Drain the oil and condensate circuits.
6	Disconnect the compressor condensate outlet and valve from the condensate net.

5 Maintenance

5.1 Preventive maintenance schedule

Warning

	Before carrying out any maintenance, repair work or adjustments, proceed as follows: • Stop the compressor. • Switch off the voltage and open the isolating switch. • Close the air outlet valve and open the manual condensate drain valves. • Depressurise the compressor. For detailed instructions, see Problem solving. The operator must apply all relevant Safety precautions.

Warranty-Product Liability

Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by Warranty or Product Liability.

General

When servicing, replace all removed gaskets, O-rings and washers.

Intervals

Carry out maintenance at the interval which comes first. The local Atlas Copco Customer Centre may overrule the maintenance schedule, especially the service intervals, depending on the environmental and working conditions of the compressor.

The "longer interval" checks must also include the "shorter interval" checks.

Preventive maintenance schedule for GX2 up to GX5

Running hours	Operation
50	Drain the condensate from the receiver.
"	Check the oil level.
500	Clean the air filter.
"	For Full-Feature versions: check that condensate from the dryer is drained automatically.
"	For Full-Feature versions: clean the condenser of the dryer.
"	Check the belt tension.
"	For compressors with PDX filter: check the service indicator, replace the filter if necessary.
2000	Replace the air filter.
"	If Atlas Copco Roto-Inject Fluid is used, change the oil.

Running hours	Operation
"	Replace the oil filter.
"	For compressors with PDX filter: replace the filter.
4000	Clean the finned surface of the oil cooler.
"	Replace the oil separator.
"	Have the safety valve tested.

5.2 Drive motor

For GX2 up to GX22

The motor bearings are greased for life.

5.3 Oil specifications

	Never mix oils of different brands or types.

It is strongly recommended to use Atlas Copco Fluid (see Preventive maintenance schedule).

Atlas Copco Roto-Inject Fluid

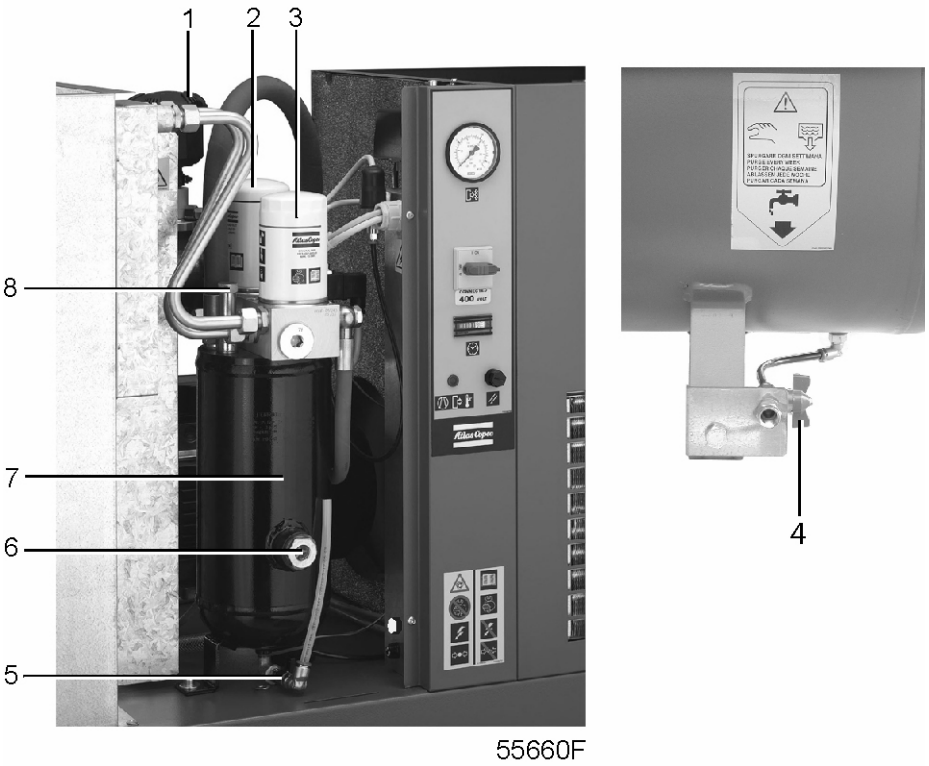
Atlas Copco Roto-Inject Fluid is special oil for oil-injected scroll and screw compressors which keeps the compressor in excellent condition. Roto-Inject Fluid can be used for compressors operating at ambient temperatures between 0°C (32°F) and 40°C (104°F)(see Service kits).

5.4 Oil, filter and separator change

Important

	Never mix oils of different brands or types. If the compressor is exposed to external pollutants, is being used at high temperatures (oil temperature above 90°C / 194°F) or is being used under severe conditions, it is advisable to change the oil more frequently. Consult Atlas Copco.

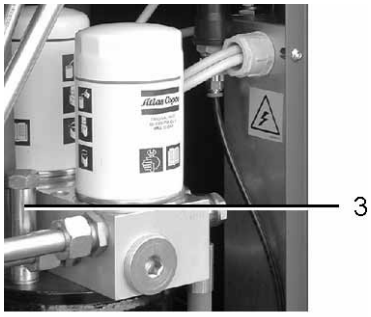
GX2 up to GX5



Step	Action
1	Run the compressor until warm. Stop the compressor, close the air outlet valve and switch off the voltage.
2	Remove the front and top panels.
3	Depressurise the compressor by unscrewing filler plug (8) one turn to permit any pressure in the system to escape.
4	Depressurise the air receiver by opening drain valve (4).
5	Drain the oil by opening drain valve (5). Close the valve after draining. Deliver the spent oil to the local oil collection service.
6	Remove oil filter (3) and separator (2). Clean the seats on the manifold.
7	Oil the gaskets of the new filter and separator and screw them into place. Tighten firmly by hand.
8	Remove filler plug (8) and fill oil tank (7) with oil until the level reaches the middle of sight-glass (6). Ensure no dirt gets into the system. Refit and tighten filler plug (8).
9	Unscrew the air filter cover (1), remove the filter element and carefully pour approx. 0.1 l (0.03 US gal / 0.02 Imp gal) of oil into the compressor element. Do not overfill.
10	Re-assemble the inlet filter
11	Fit the bodywork panels.
12	Close drain valve (4) of the air receiver.
13	Run the compressor for a few minutes. Check the oil level.

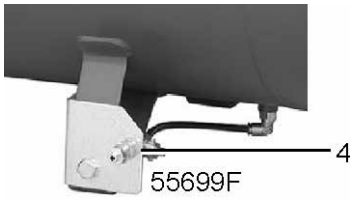
5.5 PDX filter change

Oil filler plug



GX2 up to GX5

Drain valve, air receiver



GX2 up to GX5

Step	Action
1	Stop the compressor, close the air outlet valve, switch off the voltage and depressurise by unscrewing oil filler plug (3) one turn to permit any pressure in the system to escape. Depressurise the air receiver by opening condensate drain valve (4).
2	Unscrew the vessel. A whistling noise will warn you if the vessel is not fully depressurised. If this occurs, the vessel should be screwed back and the venting should be repeated.
3	Discard the filter element.
4	Clean the vessel and replace its O-ring.
5	Fit the new filter element.
6	Refit the vessel.
7	Tighten oil filler plug (3).
8	Close condensate drain valve (4).

5.6 Storage after installation

If the compressor is stored without running from time to time, consult Atlas Copco as protective measures may be necessary.

5.7 Service kits

Service kits

Service kits are available offering the benefits of genuine Atlas Copco parts while keeping the maintenance budget low. The kits comprise all parts needed for servicing.

Service kits	Content	Ordering number
Filter kit	Air filter, oil filter and oil separator	2901 1094 00
Air filter kit	Filter cartridge	1622 0658 00
Oil filter kit	Filter cartridge	1513 0337 01
Oil separator kit	Filter cartridge	1622 0623 01
PDX kit	Filter cartridge	2901 0867 00
Roto-Inject Fluid	5-litre (1.32 US gal / 1.10 Imp gal / 0.18 cu.ft) can	2901 0245 01
Roto-Inject Fluid	20-litre (5.28 US gal / 4.40 Imp gal / 0.70 cu.ft) can	2901 0522 00
Roto-Inject Fluid	209-litre (55.18 US gal / 45.98 Imp gal / 7.32 cu.ft) can	2901 0045 01

6 Adjustments and servicing procedures

6.1 Air filter

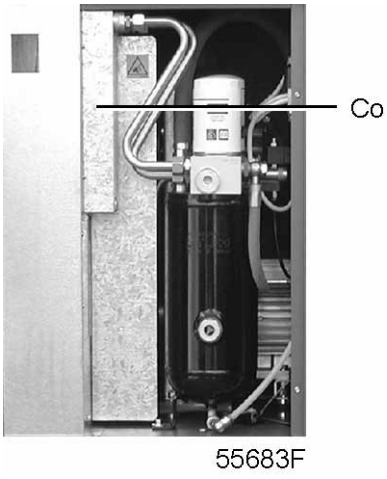
Changing the air filter

Position of air filter for GX2 up to GX5

Air filter change on GX2 up to GX22

Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage.
2	Remove the front panel and the top panel of the compressor housing.
3	Unscrew the filter cover (1) and remove the filter element. Discard the air filter element.
4	Fit the new element and screw on the filter cover.
5	Refit the top and front panels.

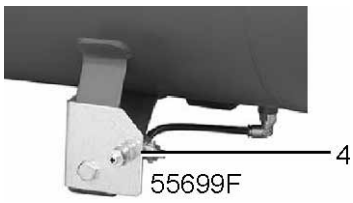
6.2 Coolers



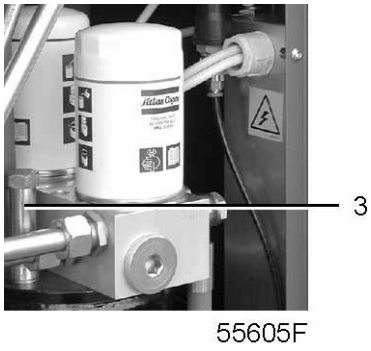
GX2 up to GX5

Step	Action
1	Keep oil cooler (Co) clean to maintain the cooling efficiency.
2	Stop the compressor, close the air outlet valve and switch off the voltage. Remove any dirt from the cooler with a fibre brush. Never use a wire brush or metal objects. Then clean using an air jet.

6.3 Safety valve



Condensate drain valve, GX2 up to GX5



Filler plug, GX2 up to GX5

Testing

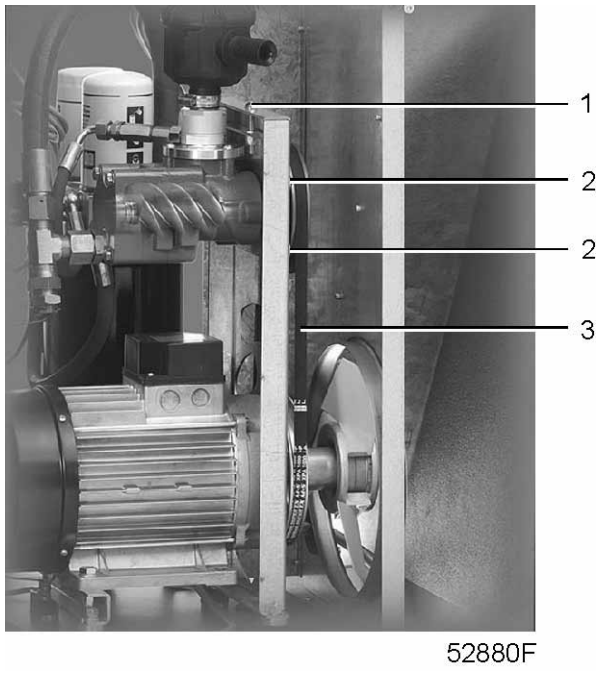
The valve can be tested on a separate compressed air line.

Before removing the valve: stop the compressor; on a Full-Feature unit also stop the dryer. Close the air outlet valve, switch off the voltage, open drain valves (4 if fitted) and unscrew filler plug (3) one turn to permit any pressure in the system to escape.

If the valve does not open at the set pressure stamped on the valve, replace the valve.

⚠	No adjustments are allowed. Never run the compressor without a safety valve.

6.4 Belt set exchange and tensioning



GX2 up to GX5

	Read the warning in the Preventive maintenance schedule section.

Adjusting the tension of the drive belt for GX2 up to GX5

Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage. For Full-Feature versions: also stop the dryer.
2	Remove the front panel of the compressor housing.
3	Remove the side, back and top panels of the compressor housing.
4	Loosen the 4 bolts (2) by one turn.
5	Adjust the belt tension by turning tensioning nut (1).
6	The tension is correct when a force of 50 N (11.25 lbf) applied at the midpoint of the belt causes a deflection of 6 mm (0.23 in).
7	Retighten bolts (2).
8	Refit the bodywork panels.

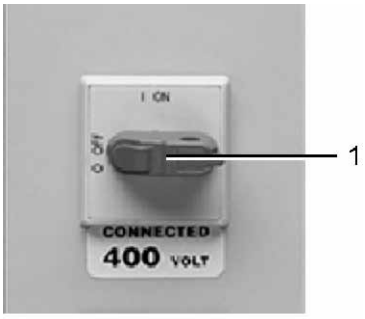
Replacing the drive belt on GX2 up to GX5

Step	Action
1	Stop the compressor, close the air outlet valve and switch off the voltage. For Full-Feature versions: also stop the dryer.
2	Remove the front panel of the compressor housing.
3	Remove the side, back and top panels of the compressor housing.
4	Loosen the 4 bolts (2) by one turn.
5	Release the belt tension by loosening tensioning nut (1).
6	Remove the fan cowl.
7	Remove the belt via the fan cowl opening. Install the new belt via the same opening.
8	Tension belt (3) as described above.
9	Re-assemble the fan cowl.
10	Refit the bodywork panels.
11	Check the belt tension after 50 running hours.

7 Problem solving

7.1 Problem solving

Start/stop switch



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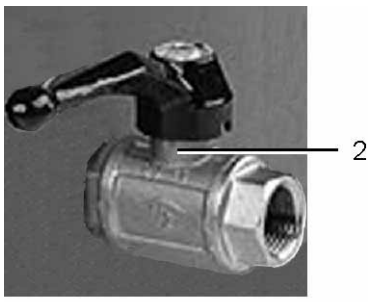
GX2 up to GX5

Air outlet valve



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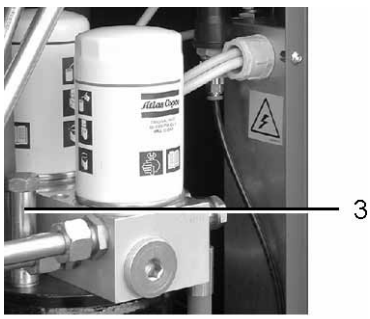
GX2 up to GX37

Oil filler plug



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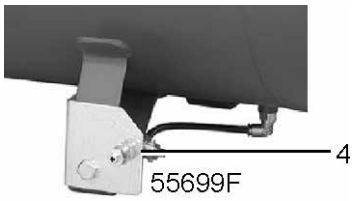
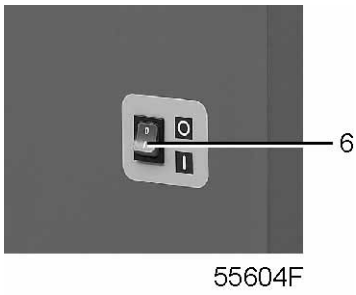
GX2 up to GX5

Drain valve, air receiver



GX2 up to GX5

Dryer on/off switch



GX2 up to GX5

Attention

	Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by Warranty or Product Liability. Apply all relevant Safety precautions.
	Before carrying out any maintenance or repair work on the compressor: move start/stop switch (1) to position 0. Move dryer on/off switch (6) to position 0. Wait until the compressor has stopped and switch off the voltage. See Stopping section. Open the isolating switch to prevent an accidental start. Close air outlet valve (2) and depressurise the compressor by opening plug (3) one turn. Open manual condensate drain valves (4 and/or 5).
	The air outlet valve (2) can be locked during maintenance or repair as follows: • Close the valve. • Remove the screw fixing the handle with the wrench delivered with the compressor. • Lift the handle and turn it until the slot of the handle fits over the blocking edge on the valve body. • Fit the screw.

Faults and remedies

For all references given hereafter, see Air flow diagram, Initial start-up or Regulating system.

Compressor of GX2 up to GX5

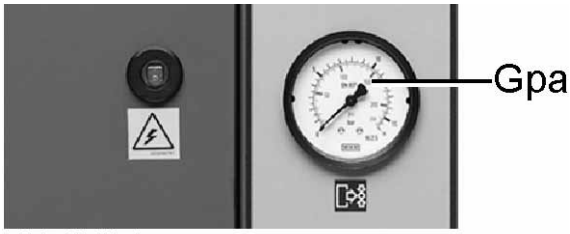
	Condition	Fault	Remedy
1	The machine does not start	No power	Check power supply
		Fuse (F1) blown	Replace fuse
		The main motor thermal protection has tripped	Check and let motor cool down; to reset/restart, move compressor start/stop switch to 0, then to I
2	The machine does not start, high oil temperature lamp is on (temperature switch tripped)	Oil cooler is dirty	Clean cooler
		Ambient temperature too high	Improve ventilation in compressor room
		Oil level too low	Top up oil tank
3	The compressor does not reach working pressure	Blow-off solenoid valve (Y1) remains open	Check; replace valve if necessary
4	Excess oil consumption	Oil separator (OS) clogged	Replace oil separator
		Oil level too high	Drain to correct level

Air dryer of GX2 up to GX5

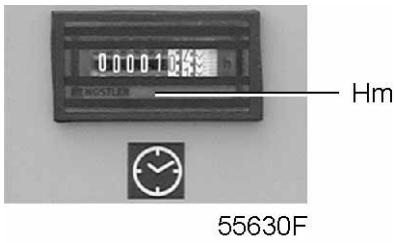
	Condition	Fault	Remedy
1	No compressed air passes through the dryer	Pipes are frozen inside	Hot-gas by-pass valve malfunctioning; consult Atlas Copco
2	Condensate in the piping	Insufficient condensate drain	Check the operation of timer (T)
		The dryer is working outside its rating	Check room temperature - air temperature at dryer. Clean the condenser and check operation of fan
3	The compressor head is very hot (above 55°C / 131°F) - motor overload	The dryer is working outside its rating	Check room temperature - air temperature at dryer. Clean the condenser and check operation of fan
		Insufficient refrigerant in dryer	Have system checked for leaks or refilled
4	The motor hums and does not start	Line voltage too low	Check power supply
		The machine was switched off and on again too rapidly (not enough time for the pressure equalization)	Wait a few minutes before starting the machine again

8 Technical data

8.1 Readings on control panel



GX2 up to GX5



	The readings mentioned below are valid under the reference conditions (see Reference conditions and limitations).

Ref.	Name
Gpa	Air outlet pressure Reading: Modulates between preset unloading/stopping pressure and loading pressure
Hm	Hour meter Reading: Total running time

8.2 Settings for overload relay and fuses

GX2 and GX3

Frequency (Hz)	Voltage (V)	Overload relay Q21 (A) of GX2	Main fuses, compressor supply (A) of GX2	Overload relay Q21 (A) of GX3	Main fuses, compressor supply (A) of GX3	Main fuses, dryer supply (A)
IEC	DOL		gL/gG		gL/gG	gL/gG
50	230	13.9	16	17.4	16	10
50	400	8	10	10	10	10
60	230, 1-ph	18.4	32	22	32	10
60	380	6.4	20	-	-	10
CSA/UL	DOL		CSA-UL		CSA-UL	CSA-UL
60	208	11.6	20	-	-	10
60	230, 1-ph	18.4	32	22	32	10
60	220/230	10.7	20	-	-	10
60	440/460	5.4	20	-	-	10
60	575	4.3	20	-	-	10

GX4 and GX5

Frequency (Hz)	Voltage (V)	Overload relay Q21 (A) of GX4	Main fuses, compressor supply (A) of GX4	Overload relay Q21 (A) of GX5	Main fuses, compressor supply (A) of GX5	Main fuses, dryer supply (A)
IEC	DOL		gL/gG		gL/gG	gL/gG
50	230	19.1	20	23.5	25	10
50	400	11	16	13.5	16	10
60	230, 1-ph	24.6	50	33.9	50	10
60	380	10.6	20	11.8	20	10
IEC	Star-delta		gL/gG		gL/gG	gL/gG
50	230	19.1	20	23.5	25	10
50	400	11	16	13.5	16	10
CSA/UL	DOL		CSA-UL		CSA-UL	CSA-UL
60	208	15	20	21.5	32	10
60	230, 1-ph	24.6	50	33.9	50	10
60	220/230	13.8	20	19.6	32	10
60	440/460	6.9	20	9.8	32	10
60	575	5.5	20	7.8	20	10

8.3 Reference conditions and limitations

Reference conditions

Air inlet pressure (absolute)	bar	1
Air inlet pressure (absolute)	psi	14.5
Air inlet temperature	°C	20
Air inlet temperature	°F	68
Relative humidity	%	0
Working pressure	bar(e)	See Compressor data
Working pressure	psi	See Compressor data

Limitations

Maximum working pressure	bar(e)	See Compressor data
Maximum working pressure	psig	See Compressor data
Minimum working pressure	bar(e)	4
Minimum working pressure	psig	58
Maximum air inlet temperature	°C	46
Maximum air inlet temperature	°F	115
Minimum ambient temperature	°C	0
Minimum ambient temperature	°F	32

8.4 Compressor data

50 Hz 10 bar (under reference conditions)

Compressor type		**GX2**	**GX3**	**GX4**	**GX5**
Frequency	Hz	50	50	50	50
Maximum (unloading) pressure, Pack	bar(e)	10	10	10	10
Maximum (unloading) pressure, Pack	psig	145	145	145	145
Maximum (unloading) pressure, Full-Feature	bar(e)	9.75	9.75	9.75	9.75
Maximum (unloading) pressure, Full-Feature	psig	141	141	141	141
Nominal working pressure	bar(e)	9.5	9.5	9.5	9.5
Nominal working pressure	psig	138	138	138	138
Pressure drop over dryer	bar(e)	0.15	0.15	0.15	0.15
Pressure drop over dryer	psig	2.18	2.18	2.18	2.18
Motor shaft speed	rpm	3000	3000	3000	3000
Set-point, thermostatic valve	°C	71	71	71	71

Compressor type		GX2	GX3	GX4	GX5
Set-point, thermostatic valve	°F	160	160	160	160
Temperature of air leaving receiver (approx.), Pack	°C	33	33	33	33
Temperature of air leaving receiver (approx.), Pack	°F	91	91	91	91
Pressure dew-point, Full-Feature	°C	3	3	3	3
Pressure dew-point, Full-Feature	°F	37	37	37	37
Power input, Pack at maximum working pressure	kW	3.8	4.1	4.9	6.6
Power input, Pack at maximum working pressure	hp	5.1	5.5	6.57	8.85
Power input, Full-Feature at maximum working pressure	kW	4.1	4.4	5.2	6.9
Power input, Full-Feature at maximum working pressure	hp	5.5	5.9	6.97	9.25
Power consumption, dryer at full load	kW	0.3	0.3	0.3	0.3
Power consumption, dryer at full load	hp	0.4	0.4	0.4	0.4
Power consumption, dryer at no load	kW	0.2	0.2	0.2	0.2
Power consumption, dryer at no load	hp	0.27	0.27	0.27	0.27
Refrigerant type		R134a	R134a	R134a	R134a
Total amount, refrigerant	kg	0.4	0.4	0.4	0.4
Total amount, refrigerant	lb	0.88	0.88	0.88	0.88
Oil capacity	l	2.5	2.5	2.5	2.5
Oil capacity	US gal	0.66	0.66	0.66	0.66
Oil capacity	Imp gal	0.55	0.55	0.55	0.55
Oil capacity	cu.ft	0.09	0.09	0.09	0.09
Sound pressure level (according to ISO 2151 (2004))	dB(A)	61	61	62	64

60 Hz 10 bar (under reference conditions)

Compressor type		GX2	GX4	GX5
Frequency	Hz	60	60	60
Maximum (unloading) pressure, Pack	bar(e)	10	10	10
Maximum (unloading) pressure, Pack	psig	145	145	145
Maximum (unloading) pressure, Full-Feature	bar(e)	9.75	9.75	9.75
Maximum (unloading) pressure, Full-Feature	psig	141	141	141
Nominal working pressure	bar(e)	9.5	9.5	9.5
Nominal working pressure	psig	138	138	138

Compressor type		GX2	GX4	GX5
Pressure drop over dryer	bar(e)	0.15	0.15	0.15
Pressure drop over dryer	psig	2.18	2.18	2.18
Motor shaft speed	rpm	3495	3490	3495
Set-point, thermostatic valve	°C	71	71	71
Set-point, thermostatic valve	°F	160	160	160
Temperature of air leaving receiver (approx.), Pack	°C	33	33	33
Temperature of air leaving receiver (approx.), Pack	°F	91	91	91
Pressure dew-point, Full-Feature	°C	3	3	3
Pressure dew-point, Full-Feature	°F	37	37	37
Power input, Pack at maximum working pressure	kW	3.7	4.7	6.3
Power input, Pack at maximum working pressure	hp	4.96	6.3	8.45
Power input, Full-Feature at maximum working pressure	kW	4	5	6.6
Power input, Full-Feature at maximum working pressure	hp	5.36	6.71	8.85
Power consumption, dryer at full load	kW	0.3	0.3	0.3
Power consumption, dryer at full load	hp	0.4	0.4	0.4
Power consumption, dryer at no load	kW	0.2	0.2	0.2
Power consumption, dryer at no load	hp	0.27	0.27	0.27
Refrigerant type		R134a	R134a	R134a
Total amount, refrigerant	kg	0.4	0.4	0.4
Total amount, refrigerant	lb	0.88	0.88	0.88
Oil capacity	l	2.5	2.5	2.5
Oil capacity	US gal	0.66	0.66	0.66
Oil capacity	Imp gal	0.55	0.55	0.55
Oil capacity	cu.ft	0.09	0.09	0.09
Sound pressure level (according to ISO 2151 (2004))	dB(A)	61	62	64

9 Instructions for use of air receiver

9.1 Instructions for use

1	This vessel can contain pressurised air; this can be potentially dangerous if the equipment is misused.
2	This vessel must only be used as compressed air/oil separator and must be operated within the limits specified on the data plate.
3	No alterations must be made to this vessel by welding, drilling or other mechanical methods without the written permission of the manufacturer.
4	The pressure and temperature of this vessel must be clearly indicated.
5	There is no intrinsic need for service inspection of the vessel when used within the design limits for its intended application.
6	Corrosion must be prevented under the conditions of use. Condensation may accumulate inside the tank and this must be drained every day. This may be done manually, by opening the drain valve, or by means of the automatic drain, if fitted to the tank.

10 PED

10.1 Pressure equipment directives

Components subject to 97/23/EC Pressure Equipment Directive

Components subject to 97/23/EC Pressure Equipment Directive greater than or equal to category II

Compressor type	Part number	Description	PED Class
GX2 up to GX5	2200 9507 74	Safety valve	IV
	2200 9507 75	Safety valve	IV

Overall rating

The compressors conform to PED smaller than category I.

GX2, GX3, GX4, GX5

Instruction Book

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.